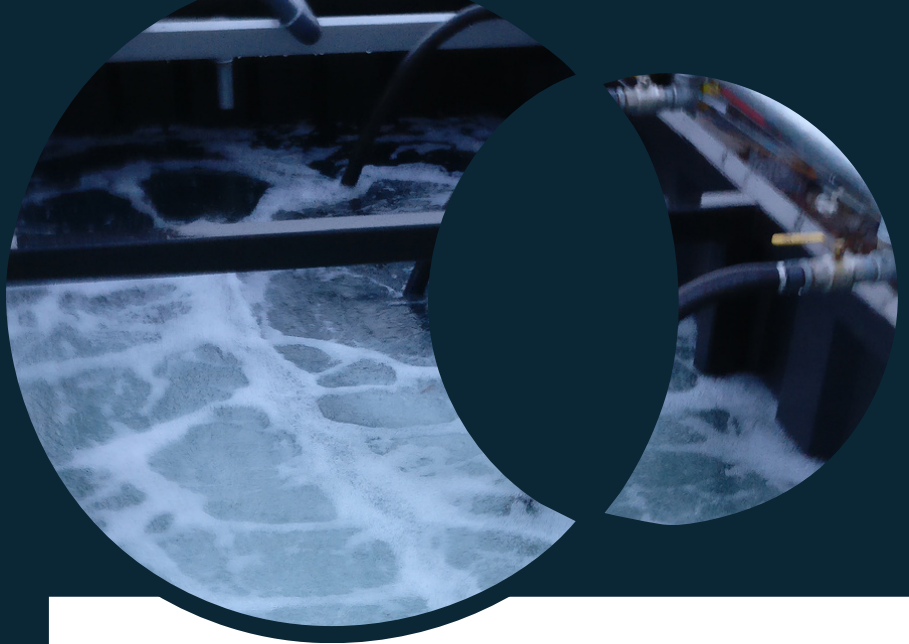


## Case Study

# Shannonvale Foods Hatchery MBR Plant



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### Client:

Shannonvale Foods

### M&E sub-contractor:

Colloide

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### Location:

Newcastle West, Ireland

### Project:

MBR

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## The Problem & Need

Facing a challenge of managing its wastewater, particularly the wash water generated from its production processes. As the company expanded, the volume of wastewater increased, presented both environmental and operational concerns. The lack of a comprehensive wastewater treatment process led to several issues.

Firstly, the untreated wash water, containing organic matter, chemicals, and other potential contaminants, posed a risk of environmental pollution. This non-compliance with environmental regulations not only threatens the natural ecosystem but also places the company at risk of legal penalties and reputational damage.

Secondly, the inefficient management of wash water results in higher water consumption, as the opportunity for recycling and reusing this water within the company's processes remains untapped. This not only increases operational costs due to higher water usage but also contradicts the company's commitment to sustainable practices. Given these challenges, the company identified a need to develop and implement an effective wastewater treatment process.

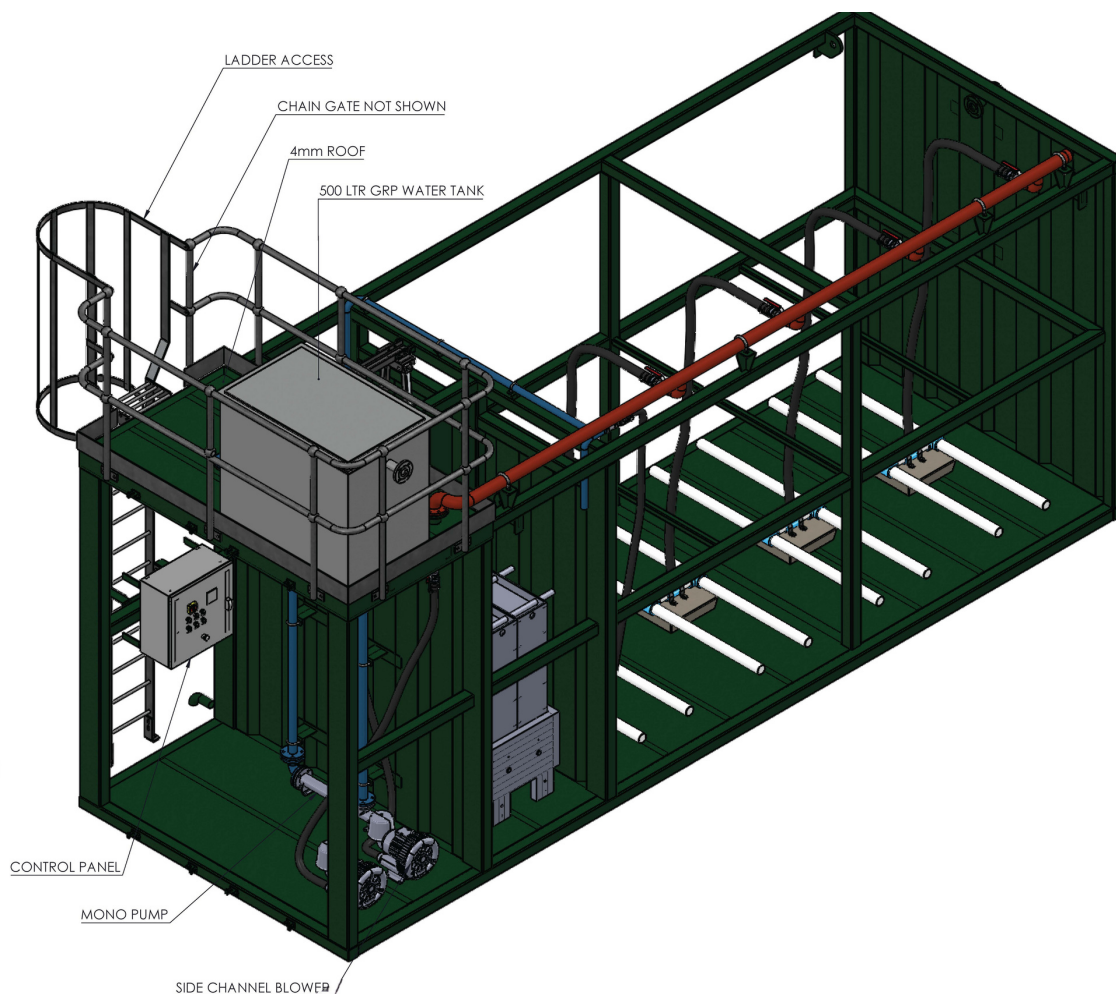
# The Solution

## Membrane Bioreactor (MBR) technology

To address the wastewater treatment challenges faced by Shannonvale Foods, Colloide designed a specialised containerized unit that integrates two advanced treatment technologies: Activated Sludge Treatment and Membrane Bioreactor (MBR).

Colloide's MBR systems have been developed with plant performance, reliability and whole life cost in mind. These systems combine activated sludge and filtration within one stage, allowing a high performance of treatment to be achieved in a small compact plant.

This solution offers a comprehensive and efficient approach to treating wash water, aligning with the company's environmental and operational goals. The Activated Sludge Treatment, a biological process, effectively reduces organic matter, nitrogen, and phosphorus from the wastewater.



# The Process

## Membrane Bioreactor (MBR) technology

In this process, microorganisms break down organic pollutants, resulting in a cleaner effluent. This method is known for its reliability and effectiveness in treating complex wastewaters from food and beverage processes. Complementing this, the Membrane Bioreactor (MBR) technology combines biological treatment with membrane filtration.

**This advanced treatment offers several advantages, such as**

- high-quality effluent suitable for reuse
- reduced footprint compared to conventional systems
- and; lower sludge production.

The MBR process is particularly effective in removing residual suspended solids, bacteria, and viruses, ensuring that the treated water meets stringent quality standards. The integration of these two technologies in a containerised unit provides a scalable, modular solution that can be tailored to the specific needs of Shannonvale Foods.

The containerised design ensures ease of installation and flexibility, allowing for future expansion as the company grows. This solution not only addresses the immediate need for efficient wastewater treatment but also offers a sustainable approach by enabling water recycling, reducing overall water consumption, and ensuring compliance with environmental regulations.

